

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the outstanding grounds of objection and/or rejection are respectfully requested in light of the above amendments and the remarks that follow.

The Examiner has objected to the specification for failing to provide antecedent basis for the claimed subject matter, noting the limitation in claims 1, 10 and 13 calling for a substantially 90° shoulder.

By this Amendment, each of the independent claims has been amended to delete the word “substantially” so that the claim language reflects precisely the language in the specification.

The Examiner has also objected to claims 1-13, citing various informalities on page 3 of the Official Action. By this Amendment, applicants have amended each item in the manner suggested by the Examiner.

The Examiner has rejected claims 1, 2, 4-6, 7 and 9-13 under 35 U.S.C. § 103 as unpatentable over Gupta in view of Kercher.

The primary reference to Gupta discloses various hole configurations and shapes wherein a second or outlet opening has a cross-sectional area greater than the inlet opening by an amount which is no less than the reduction and cross-sectional area resulting from a partial deposit of coating material within the second opening. After discussing the tapered passages shown in Figures 1 and 2, Gupta notes that passage and opening shapes other than the tapered configurations of Figures 1 and 2 may be utilized so long as the relative opening sizes noted above are maintained. In Figures 3A-3D and Figure 4, Gupta discloses other suitable passage shapes. In no case, however, is there disclosed or suggested a film cooling hole with a concentric counterbore at an exit end where the hole and counterbore are parallel and connected by a 90° shoulder as required by each of the independent claims of this application. In fact,

while Gupta does indeed vary the inlet end of the passage from a tapered configuration to a parallel wall configuration, in every case the outlet end is tapered or concavely-curved in an outward direction to increase the outlet opening cross-sectional area. It is respectfully that one of ordinary skill in the art would understand from Gupta's disclosure that an outwardly tapered or concavely curved outlet opening is of significance, and that the disclosure does not embrace a concentric counterbore connected to the main passage by a 90° shoulder. It will be appreciated that the 90° shoulder will be considerably more effective in preventing excess coating material from migrating into the main passage.

With regard to the secondary reference to Kercher, coolant holes or passages 50, 52 and 54 are provided through the blade sidewall 55 at an adjacent the blade leading edge 56 to communicate the leading edge plenum chamber 42 with the blade exterior surface to provide a film of cooling fluid which attaches itself to the exterior surface of the blade. Kercher is wholly silent with respect to any problem relating to the accommodation of excess coating material. In fact, coatings are not even mentioned in Kercher. Kercher's only concern is to diffuse the cooling flow at the exit end in order to minimize mixing with the external hot gas.

It is therefore respectfully submitted that the combination of Kercher and Gupta can only be made with the utilization of impermissible hindsight gained from applicants' own disclosure. Thus, the combination is insufficient to establish prima facie obviousness with respect to any of independent claims 1, 10 and 13.

The remaining dependent claims are patentable by reason of their dependence upon their respective independent claims.

The Examiner has rejected claim 3 as unpatentable over Gupta in view of Kercher and Fric. Since the tertiary reference to Fric fails to remedy the deficiency in the base combination of Gupta and Kercher, claim 3 is clearly patentable by reason of its dependence upon claim 1.

Claim 8 has been rejected on the same ground as claim 3 and is patentable for the same reasons noted above.


Since the proposed amendments to the claims clearly overcome the objections raised by the Examiner, entry of the Amendment is fully consistent with 37 C.F.R. § 116(b). In addition, it is respectfully submitted that the application is now in condition for immediate allowance and early passage to issue is requested. In the event, however, any small matters remain outstanding, the Examiner is encouraged to telephone the undersigned so that the prosecution of this application can be expeditiously concluded.

The Commissioner is hereby authorized to charge any deficiency in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By:


Michael J. Keenan
Reg. No. 32,106

MJK:rrl
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100